**AP Environmental Science - Energy Resources Project**

**Overview:** Nonrenewable resources exist in a finite amount in the earth’s crust. These resources are typically carbon-containing fossil fuels, including oil, coal, and natural gas, but also include nuclear power. Renewable resources, on the other hand, can be replenished fairly rapidly (from hours to decades) through natural processes as long as they are not used faster than they are replaced. These resources help to generate energy efficiency and create new energy sources through solar power, wind, wave and tidal, geothermal, biomass, and hydropower. This project will allow students to understand the economic and environmental advantages and disadvantages of each of these energy sources.

**Objective:** To investigate and present various forms of nonrenewable and renewable energy sources as a class and, at the end, decide which energy source(s) the U.S. should invest in to move toward a more sustainable energy future.

**Procedure:** You will work individually or with one partner. Use library books, Internet, school databases, and the APES textbook to research information about your assigned energy source. The energy sources assigned will be:

Solar Energy Wind Energy Wave & Tidal Energy

Biomass Hydroelectric Nuclear Energy Coal

Geothermal Energy Fuel Cells/Hydrogen Natural Gas Oil (Shales and Sand)

As a pair (or individually), you must create a digital presentation (upload it to Sharepoint) about your assigned energy source to share with the class and an informative newsletter. Be sure that your presentation is both detailed and easy to understand, and that all new terms are explained. Your presentation must be between 3 and 7 minutes long. Presentations can take a variety forms, including but not limited to: a moviemaker video, slideshow, recorded video skit, digital storybook, etc. Please be sure that your presentation format will work when played in class (hint: save movies as a .wmv file or upload to youtube.com)

Your **Digital Presentation (55%)** must include the following:

\_\_\_\_\_\_\_ How the energy is produced (describe the actual mechanism)

\_\_\_\_\_\_\_ Where this type of energy is typically found/harnessed

\_\_\_\_\_\_\_ Waste products and treatment

\_\_\_\_\_\_\_ Environmental advantages and disadvantages to this energy source

\_\_\_\_\_\_\_ Economic advantages and disadvantages to this energy source

\_\_\_\_\_\_\_ Any apparent or hidden environmental and social costs

\_\_\_\_\_\_\_ Is this technology widely used today? Why or why not?

\_\_\_\_\_\_\_ How much energy can be produced from this source? Is it cost efficient?

\_\_\_\_\_\_\_ Other interesting facts (efficiency, popularity, statistics, current issues, etc.)

\_\_\_\_\_\_\_ At least 5 relevant images/visuals

\_\_\_\_\_\_\_ List of at least 4 sources in APA format, at least one from a book/print source

Your **Newsletter (45%)** must include the following:

\_\_\_\_\_\_\_ Creative title – relevant to your topic

\_\_\_\_\_\_\_ Introduction: Detailed summary of your energy source (advantages, disadvantages, how it works, etc.)

\_\_\_\_\_\_\_ Two Articles: Summary of two relevant current event articles (from the 12 months)

\_\_\_\_\_\_\_ Opinion Piece: Explanation of why your group thinks this energy source should or should not be used for energy and a justification as to why

\_\_\_\_\_\_\_ Other interesting facts (efficiency, popularity, statistics, etc.)

\_\_\_\_\_\_\_ At least 3 relevant images/pictures

\_\_\_\_\_\_\_ List of at least 2 additional sources in APA format (for your two current events)

BE CREATIVE!